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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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DOGM
MINERALS PROGRAM
FILE COPY

March 6, 1989

Mr. Scott N. Hartman
Unit Manager
Hecla Mining Company
Escalante Unit
P.O. Box 310
Enterprise, Utah 84725

Dear Mr. Hartman:

Re: Conditional Approval of Reclamation Plans, Escalante Silver Mine,
M/021/004-89(1), Iron County, Utah

Thank you for your January 26, 1988 letter which outlined plans for continued reclamation of the Hecla Escalante Silver Mine during 1989. The proposed mine abandonment and reclamation plan submitted by Hecla Mining Company is adequate provided the following minor conditions are incorporated into your plans:

GENERAL CONDITIONS:

R613-004-108. Hole Plugging Requirements

The operator has plugged and reclaimed over 200 exploration holes since November, 1988. The remaining exploration holes, if any, must also be plugged and reclaimed. There are still several water wells on the property that need to be reclaimed. The operator plans to reclaim some water wells on the property.

The wells must be plugged and abandoned in compliance with DOGM standards, or if originally approved by the State Division of Water Rights, they must be plugged and abandoned according to their requirements.

Wells to be left for use by local ranchers must be approved, for such use, by the State Division of Water Rights.

R613-004-109. Impact Assessment

At peak production, the mine was discharging 26,000 gallons-per-minute into the canal systems. Since the mine shutdown, this water has flooded the mine to become part of the groundwater system.

Before the Division can approve of bond release, it must be demonstrated that the water levels in the area aquifer(s) have reestablished to the premining conditions. There also must be no uncontrolled, or unpermitted surface discharge of groundwater from the mine upon final reclamation of the minesite.

The State Division of Environmental Health and/or Federal (EPA) water quality standards will apply to the postmining ground water quality, (whichever is most applicable at the time of bond release).

R613-004-110. Reclamation Plan

The operator plans on burying the South canal liner during reclamation. There is approximately 6,000 square yards of this polyethylene liner in the canal.

The Division spoke with the State Health Department, Bureau of Solid and Hazardous Wastes, concerning burying the South Canal polyethylene liner. They indicated that there should be no problems with disposing of the liner in this fashion.

Please cover the buried liner with at least 1.5 feet of soil material to provide adequate space for plant root growth.

R613-004-111. Reclamation Practices

1. The operator plans to cover all culverts that are difficult to salvage (i.e., running under paved County roads). This practice will leave a void under the roadway. Since any culvert will likely deteriorate and collapse over time, we recommend the following:
 - a) fill the void with a sand and gravel mixture; and
 - b) cap the ends of the exposed culvert with concrete.
2. By now, the operator has filled most, if not all, of the post-law ventilation shafts. The only remaining entrance to the mine is the decline adit. Until corporate plans are finalized, the Division is allowing Hecla to postpone final sealing of this adit.

Although MSHA requires the operator to fence this portal, the Division will also require the operator to post a warning sign on this locked fence.

3. On areas to be reseeded, the subsoil or spoil material should be ripped before the application of topsoil. Ripping is unnecessary where subsoil compaction is low, or where a substantial amount of loose topsoil will be applied.
4. Where topsoil is unavailable (on areas not covered by rock), a native hay mulch should be applied to the planting medium. The rate of application should be 4,000 lb/ac. The mulch should be disced into the planting medium prior to seed application.

A fertilizer needs to be applied when using mulch. The rate of application should be 200 lbs/ac., diammonium phosphate, 18-46-0. The time of application should be in the spring when plants are germinating.

5. What seed mix the operator uses on private, agricultural lands is up to Hecla. However, the Division would like to know which species are to be planted.
6. Ultimately, the Division will require the operator to assemble a complete and consolidated reclamation proposal to replace the "phased approach" which we have received to date. This final reclamation proposal should include, in one package, all of the approved reclamation details used by Hecla to reclaim the minesite. It should be properly formatted to allow direct insertion into the originally approved Notice of Intention (NOI) for the mine.

GENERAL CONCERN:

1. The operator has not yet proposed a plan for reclaiming the tailings impoundment. The operator will continue to use this impoundment until the ore stockpile is exhausted, which will probably be in 1990.

Before a final reclamation plan is formalized for this area, the Division recommends that the following analyses of the tailings material be performed:

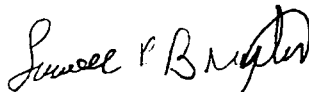
- a) Evaluate the nutrient and physical properties of the material by examining the following: organic matter, nitrate nitrogen, available phosphorus, exchangeable potassium, soil pH, cation exchange capacity, electrical conductivity, texture, sodium absorption ratio, selenium, boron, and saturation percentage;
- b) Evaluate the acid-base potential. This would require an analysis of the potential acidity of the material, as it relates to the neutralization potential of the material;
- c) Evaluate total cyanide;
- d) Perform an EP toxicity analysis for inorganics: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

In carrying out the above analyses, the operator will need to develop a comprehensive sampling program which will ensure that representative samples are obtained from the tailings pond. Because the tailings impoundment is quite large, a series of composite and depth correlated samples may be necessary.

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The Division appreciates Hecla's cooperation in working with us to develop a sound reclamation proposal. Unless we receive written notification from you to the contrary, we will assume that the preceding "general conditions" are acceptable. Please feel free to contact us at any time should you have additional permitting questions or concerns.

Sincerely,



Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

DWH/jb
cc: Paul Carter, BLM, Cedar City District Office
Brian Johnson, Hecla Mining Co.
Don Ostler, BWPC
Minerals Team
MN3/47-50